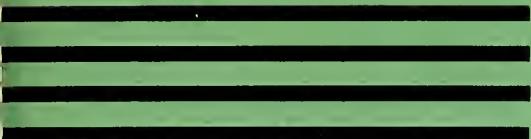


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EXTENSION SERVICE REVIEW

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TODAY . . .

WHERE THE PROBLEM BEGINS - - - - - Reuben Brigham, assistant director of extension work, discusses the why's and wherefore's of land-use planning.

THE EXTENSION SYSTEM—AN APPRAISAL - - - - - Dr. E. de S. Brunner, of Columbia University and a member of the President's Committee on Education, takes a look at the Extension Service.

ESSENTIALS OF THE NATIONAL AGRICULTURAL PROGRAM - - - - - Secretary Henry A. Wallace writes the first in a series of articles on the program of the Department of Agriculture and the part played in that program by the different bureaus and action agencies.

YOUTH EXTENSION CLUB LEADS A BUSY LIFE - - - - - Interesting activity is the regular diet of the Youth Extension Club of Sullivan County, N. H., as described by County Club Agent N. F. Whippen.

ALABAMA FARMERS FIGHT EROSION THE COOPERATIVE WAY - - - - - An account of soil saving in Tallapoosa County, Ala., which has blazed the way for other counties in the State during the last 7 years under the leadership of County Agent Fletcher Farrington.

MY JOB AS I SEE IT - - - - - E. R. Jackman, extension specialist in farm crops, Oregon, like the absent-minded professor in the bathtub, considers "Now who am I, and why did I get in here?"

SOIL CONSERVATION DISTRICTS MAKE PROGRESS - - - - - Edd R. Roberts, extension soil conservationist, Oklahoma, tells of the organization of Creek County Soil Conservation District, 1 of the 24 such districts organized in the State.

SOLVING LAND-USE PROBLEMS - - - - - Claiborne County, Tenn., charts a course to save the land under the leadership of County Agent C. F. Arrants.

BUILDING CONSERVATION LINES OF DEFENSE THROUGH 4-H ACTIVITIES - - - - - A résumé of 4-H conservation activities throughout the United States compiled from annual reports.

GROWTH IN ECONOMICS HAS BROADENED EXTENSION'S USEFULNESS - - - - - Dr. C. B. Smith completes his discussion of the development of extension work in economics which was begun in the January number.

EVERY ACRE TO ITS BEST USE - - - - - Fred R. Keeler, county agent, Ross County, Ohio, describes the steps in working out a land-use program which fits the county.

WATER AND SOIL CONSERVATION - - - - - An account of an experimental program in Weber and Davis Counties, Utah, in which farm records throw considerable light on methods of water and soil conservation in the State.

EXTENSION SERVICE REVIEW - - - - Published by direction of the Secretary of Agriculture as administrative information required for the proper transaction of the public business. The Review is issued free by law to workers engaged in extension activities. Others obtain copies from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents each, or by subscription at 75 cents a year, domestic, and \$1.15, foreign. Postage stamps not acceptable in payment.

EXTENSION SERVICE

C. W. WARBURTON, Director

REUBEN BRIGHAM, Assistant Director

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THE LOCAL TOUCH is emphasized in two of the articles scheduled for next month. County Agent W. A. Price says local news added listeners to his regular radio broadcasts in Alamosa County, Colo., and local motion pictures are said to be adding zest to extension meetings in Massachusetts. The article from Massachusetts gives some good suggestions on methods and equipment.

FIRST CONSERVATION DISTRICT in Kansas found guideposts outlining a practical program of work in the recommendations of the county planning committee in Labette County, which had been functioning for 3 years, according to an article just received from Kansas.

ECONOMIC CONFERENCES in Oregon have resulted in a long-time program charting the course for agricultural development in each county, according to Wm. L. Teutsch, assistant county agent leader, who will write of their organization and achievement.

THE DEPARTMENT'S PROGRAM will be discussed by H. R. Tolley, Chief of the Bureau of Agricultural Economics, the Department's planning agency, in the second of the series begun by the Secretary in this issue.

COUNTY PLANNING will be treated in an article from Scott County, Mo., where Roy L. Furry got behind the work with vision and a will to make it succeed.

YOUNG FARM FAMILIES and their problems have been very much in the mind of County Agent Jimmie Green since he started his work in Benton County, Iowa. What he has done about it will be described next month.

On the Calendar

Convention American National Livestock Association, San Francisco, Calif., Feb. 15-17.

Southwestern Livestock and Agricultural Show, El Paso, Tex., Feb. 18-22.

Cotton States Branch of American Association Economic Entomologists, Tampa, Fla., Feb. 21-23.

Eastern States Regional Conference, New York, N. Y., Mar. 1-3.

Southwestern Exposition and Fat Stock Show, Fort Worth, Tex., Mar. 10-19.

63d Annual Convention Texas and Southwestern Cattle Raisers Association, Inc., Houston, Tex., Mar. 21-23.

Triennial Meeting, Association of Country Women of the World, London, England, May 30-June 9. Seventh World Poultry Congress, Public Auditorium, Cleveland, Ohio, July 28-Aug. 7.

Where the Problem Begins

REUBEN BRIGHAM
Assistant Director of
Extension Work

UNWISE use of the land is deeply involved in the several major farm problems the country faces today. Crop surpluses, worn-out and washed-away farms, low farm income with its accompanying distress, all, in one way or another, begin with use of the land to grow crops and produce income.

It is thus quite fitting that the Extension Services and the Department of Agriculture are pushing with increased vigor a long-time program of land-use planning—planning by farm people with co-ordinated assistance from all the agencies that can help with planning or with putting the plans into effect.

PROBLEMS CHANGE. There was a time when our main concern in extension work was deciding the best type of demonstration or educational procedure and selecting from results of the various experiments the best technical practices we could carry to farm people for their use.

How different are our outlook and our opportunities today! Farm people have greater need now than ever for sound technical advice, but if that advice is to mean most to them, it should be considered in terms of the adjustments in land use and types of farming that individual farmers and agriculture as a whole must make.

The Extension Service has an enviable record of helping farm people over the last quarter of a century. From the beginning, through the World War, through the period of adjustment immediately following, and more recently, it is evident that extension agents have constantly felt the pulse of farm needs and have sought to change their services to best help farm people to meet those needs.



PLANNING TO THE FRONT. Recent years have brought on growing economic and social problems; new action agencies have been formed to help meet those problems. The recent emphasis which extension workers have placed on land-use planning and program building and the cooperation given these new action agencies stand as another change we are making to help farm people meet new conditions.

Close to the farm as they are, extension agents have naturally and wisely for years made use of advice from committees of farm people in planning extension programs. More and more in recent years program planning has been pushed. During the last 2 years more than 2,200 county agricultural planning committees, composed of leading farm people and organized by extension agents, have functioned.

This issue of the REVIEW carries a number of examples of State and county programs in which extension agents have led farm people to better use of their land in the interest of conservation of the soil, increased income, and community betterment.

ACTION PLUS PLANNING. More recently, in cooperation with other bureaus of the Department of Agriculture, we have further developed land-use planning. This planning has been developed and pointed in such a way as to assure the closest possible tie between such planning and the administration of the Department's programs that can help to carry out the plans. Thirty States have now started revised land-use planning projects in line with an agreement

(Continued on page 30)

The Extension System

• • • • An Appraisal

DR. E. de S. BRUNNER

THE COOPERATIVE Extension Service of the United States has now become the largest enterprise of adult education in the world. Many other countries are adapting its principles and earlier procedures to their own situations.

In its first quarter century of existence, Extension has built up a most substantial record of achievement. It is not too much to say that Extension has demonstrated that education can produce social change. The growth of the cooperative movement, a cardinal point in the Extension "curriculum" of the 1920's, coincided with the development of the Extension Service. So has the increase in the efficiency of American agriculture. It is not claimed that the educational program of Extension was the sole cause of these and many other highly significant developments, but it is clear that without Extension, rural America would be different and less attractive than it is, that much of value now taken for granted by millions of people would not exist.

Train Local Leaders

Not the least important contribution of Extension has been its use and training of local leaders. This device has multiplied the power of the agent. Far more important, it has by this device built its program on the democratically sound basis of local participation and decision. The broader social significance of such an achievement, tested over 25 years, in troublesome times such as these, is perhaps too little appreciated both within and without the Service.

Again, Extension has made contributions to educational method. Two seem of particular importance. Although a few educators for several centuries have written about "the project method," it was the demonstration technique of Extension that proved its efficacy both generally and specifically in terms of adult education. Similarly, Extension has contributed to the perennial problem of

humanizing knowledge. It has provided a channel whereby the findings of research and the knowledge of specialists could be brought to the average man and woman in usable, understandable terms.

Every agency, especially a large one, faces the constant danger of institutionalizing its program and procedures, of drawing apart from its constituency and their changing needs in the process of conducting a going program. To a remarkable degree, probably because of its close contact with farm people, the Extension Service has avoided this danger. But the problem is ever present and is a never-to-be-forgotten factor in answering the questions the future ever raises.

Demonstration and Discussion

The developments of the last decade seem to warrant stressing two of these questions, out of a possible half dozen.

(1) What adjustments must Extension make because of the A. A. A.? Here the teaching is no longer in terms of the techniques of the physical sciences. Suddenly the world and national situations have forced an entry into the less precise realm of the social sciences. This necessitates changes in teaching methods, new techniques of presenting materials, for instance, less demonstration and more discussion. Discussion, too, involves problems of group management, of social organization so that both the economist and the sociologist become concerned. Eventually the proportion of time devoted to skills may have to be reduced, and subject-matter specialists may face adjustments. But such a process always happens when institutions change with changing needs. But in this process Extension must always remain an *educational* agency. Unless we adopt the loathsome techniques of dictatorships, action in our democracy must always be on the basis of shared decisions emerging from an educational process. There seems to be no escape from the need for including the great social and

Dr. Brunner is a prominent educator from Columbia University and a member of the President's Committee on Education. He has recently made a study of the Extension Service, and in this article he gives us an outsider's look at extension work.

economic forces that are sweeping across the world and their implications for Rural America in Extension's program. With the growing proportion of the farm population that have enjoyed training in agriculture and home economics in high schools, the vocational load on Extension, although it will never disappear, is lightening.

Liberal Practical Education

(2) There is ample evidence that, despite the depression, rural people are struggling for a higher standard of living for both family and community and for broader understanding of their total social situation. The wide popularity of the groups for the discussion of public affairs shows this. So does the keen and growing interest in child psychology, parent education, and similar subjects, all but unknown in the Extension program of a decade ago. Highly significant, too, is the rapidly mounting interest and participation in drama, art, and music. It is not too much to say that there is under way in the farming communities of the United States a cultural revival, authentically American, that, properly guided, may mean as much for us as the folk schools have meant for Denmark.

The Extension Service is an integral part of our land-grant college system, and these colleges were founded for "liberal and practical education." Perhaps too long we have forgotten the first word. The logic of our present circumstances seems to create for Extension as it faces the future's broadening way an even larger opportunity for service, influence, and achievement in its second quarter century than it has enjoyed in its first 25 years.

THREE home demonstration clubs in Madison County, Ark., have assembled sickroom kits, each containing sheets, pillow cases, towels, gowns, a hot water bottle, an ice cap, and a thermometer. This equipment is available to any sick person in the community. Club members raised money for this activity in several ways including the selling of quilts and ice cream.



Essentials of the National Agricultural Program

HENRY A. WALLACE
Secretary of Agriculture

IT IS a good idea to stand back once in a while and take fresh bearings. It is especially so in these days with workers in the field of agriculture, for responsibilities have been piled on their shoulders with bewildering rapidity in recent years. Since 1933, when the long-standing dam against agricultural legislation burst, we have experienced one of those rare periods in which the accumulated problems of many years find expression in new laws.

New Farm Policy

The Congress alone has passed more than a dozen major farm laws and a number of minor ones in this period. Some of these, as you know, have been superseded or amended in the light of experience, court decisions, and changing circumstances. The States also have responded with laws bearing directly upon agricultural welfare. I am thinking especially of the State soil conservation districts laws which the legislatures of 26 States have enacted in the past 2 years, of the new rural zoning laws in several States, of Oklahoma's recently enacted farm tenancy law, and similar types of legislation. Together, these State and Federal laws have started to spell out a new farm policy for the country. The policy is not yet fully formed. For some time to come we may expect, I think, continued legislative activity.

In the first years of this legislative period the laws authorizing new farm programs gave first consideration to prices and farm income. With the price situation as it was in 1933, it was natural and right that such considerations should overshadow all other aspects of the attack on the farm problem. To remove the immediate causes of low farm in-

The general objectives of the Department of Agriculture and how reorganization is facilitating work toward these ends is explained by the Secretary in this, the first of a series of articles on the Department's program and the policies of the different bureaus and action agencies in carrying it out.

comes—the surpluses—was a necessary first step toward stability. If the public programs are to accomplish their purposes, it is essential that, first of all, they contribute to income stability.

Must Make Adjustments

However, in our efforts to attain fair prices we must not lose sight of the need for making some fundamental readjustments in agriculture. I can conceive of an economy offering fair prices to farmers which would leave some of the fundamental ills uncured. The roots of some of our problems of today are sunk deep in the past. We are dealing with conditions which owe their origin to a period when prices were favorable to farmers. The early land policies permitted and in many cases even forced misuse of land, encouraged development of soil-depleting systems of farming, and laid the foundations for our tenancy problems of today—problems which were aggravated and exaggerated by the boom period of the war and its aftermath.

Farm Problem Complex

To review the farm acts of the Congress is both to reveal the complexity of the farm problem and to recount the various tools which we have for making the total attack. In addition to the A. A. A. programs with which you all are familiar, there are a dozen others with which you may be less well acquainted. There is the effort of the Farm Security Admin-

istration to cope with the rehabilitation of the most severely disadvantaged families in agriculture, the program initiated by the Resettlement Administration and taken over in modified form by the Department. To the problem of erosion control Congress responded with the act that created the Soil Conservation Service. The Bankhead-Jones Act provided for tenancy reform and for public acquisition of land submarginal for agriculture and its development in ways to benefit the people of wide areas. The Water Facilities Act provided for small water developments in the arid and semiarid areas where these are necessary to agricultural stability. The Flood Control Act of 1936 and subsequent amendments authorized land treatment for flood control. Other acts provided for the development of farm forestry, for crop insurance, marketing agreements, for purchase of lands for public forests, for developing wildlife sanctuaries, and for other activities. This list is only a partial one, and it includes only those programs which have been assigned to the Department of Agriculture for administration.

New Supplements Old

The new farm policies which the Federal Government has expressed in this legislation do not, of course, supersede the old policies; rather, they add to and supplement them. The fact that we now have a series of farm programs which have come to be designated "action" programs in no sense lessens the importance

of the older programs of research and education. It merely indicates the conviction of the public that research and education alone can not meet the needs of the day. It is hardly necessary to point out that, because of our new programs, we must attach greater importance than ever to these older lines of work. Without them we cannot have adequate knowledge on which to base public programs of "action," be able properly to plan for such programs, or take to the public a working understanding of them.

Director Warburton tells me that this is the first of a series of articles discussing the various programs administered by the Department, and that Howard Tolley, who is now chief of the newly constituted Bureau of Agricultural Economics, will write about planning public agricultural programs in the March number. At the risk of stealing some of his thunder, I want to say something of the planning agreement entered into at Mt. Weather by the colleges and the Department in July.

Planning For Action

In my opinion, the Mt. Weather agreement is a milepost in the evolution of agricultural planning. Its fulfillment will provide the machinery for planning public farm programs in a democratic way, because it is based on the concept that farmers themselves should join together and guide their own programs of action in the light of all the knowledge research and education can put at their command. It provides a way for farmers and specialists to pool their information, synthesize it, and come to common agreements on programs of action.

We are now in a period of transition. Actions planned under the stresses of emergencies must give way to actions based on the considered judgments of as many qualified persons as possible. The setting up of the community and county land-use planning committees as agreed to at Mt. Weather will represent the first confident step in that direction.

This special emphasis on land-use planning is not to be construed as a declaration that land-use planning is all there is to agricultural planning, or that it is even a dominant part of it. It happens that the land-use features of the federal programs are their one common characteristic—the one point at which they all may be brought together. It seems, therefore, a logical starting point for comprehensive program planning. Progress reports from the field are very encouraging.

Youth Extension Club

Leads a Busy Life

N. F. WHIPPEN

County Club Agent, Sullivan County, N. H.

THE YOUTH Extension Club of Sullivan County, N. H., has managed many county events as well as its own club affairs. The 4-H county fair, an annual event with more than 1,500 exhibits, was conducted under their leadership. They counseled 58 4-H campers at the county camp and ran a winter carnival for the county in February. Last spring a flying squadron was organized from their ranks to assist other organizations in recreation. Whole evenings of games and fun have been managed by the squadron in 3 communities where 150 youngsters and adults have had the time of their lives. The youth members were so successful in their leadership that the club agent asked them to accompany him to nine 4-H club achievement meetings last fall.

They triumphed in the State one-act play contest and entertained 600 gleeful State campers at Durham with "Who Gets the Car Tonight?" They have given the play four times in the county before more than 300 people. They have done the lion's share of the editing of the Youth Extension Tattler, a monthly county paper giving news and information to youth members.

The membership comes from rural communities, and 16 years is the minimum age. Many are out of high school and on the farm. The president, a high school graduate, was managing a 300-acre hill farm with his parents and brother until the September hurricane tore their buildings into a shapeless state. Now they rent a valley farm in West Claremont. The secretary, also a high school graduate, helped her mother to keep house this past year on a large dairy farm; and the social chairman works in a shoe shop. She loves to travel and, among other places, has been to Idaho and Montreal. Kidder and Miller Farman of Charlestown run the home place. Kidder's hobby is transforming touring cars into tractors, whereas Miller's is cooking, and he recently won over the women in the county pie contest. The long list of members' interests includes art work, Christian Endeavor leadership, learning to play

musical instruments, interior decorating, stamp and bug collecting, fancy work, dress designing, and 4-H leadership.

Many of the members have been recognized in the past for project results. Annie Sabalewski represented New Hampshire at Chicago in 1937 in the national costume contest. Nearly every member in the club has been to the State 4-H camp. The president of the club was a delegate to the national camp at Washington in 1937. The youth institute at the university has been attended by eight members. The State 4-H office selected five of the members to go to Camp Vail at the Eastern States Exposition.

The club in 1938 was the Northeastern States winner in the National Social Progress Contest for 4-H Clubs, and a team from the club represented the Northeast in the national contest at the National 4-H Club Congress in Chicago. The team was composed of Edward LeClair, Mary Sabalewski, and Edith White, with Mrs. N. F. Whippen as adult leader.

The meetings are held in different towns, depending upon invitations by the membership. An educational program was planned in November 1937 for this last year that included talks by outside speakers as well as by the members. Three members each reported on two chapters of Milton Wright's book, *Understanding Human Nature and How Men Differ*. Judge Albert Leahy talked on civic problems. Rev. C. B. Etsler clarified the principles of a good personality. International peace and what organizations promote it and music appreciation were discussed by prominent men in the county. A debate on national issues brought all the club into the fray at one meeting. A social program accompanies each meeting; and the boys and girls have entered enthusiastically into carol singing, musical games, active and quiet games, dancing, box parties, hiking, and outings.

The members have learned much about good organization, have been inspired by their speakers, and have enjoyed themselves with their home-made recreation.

Alabama Farmers Fight Erosion

The Cooperative Way

YOU HAVE no soil to work with in developing a program for this county.

That was the verdict reached at a meeting of extension service specialists with Fletcher Farrington immediately after he was appointed county agent in Tallapoosa County, Ala.

Save Soil or Give Up?

Erosion, no terraces, no winter protecting crops, and wasted people and wasted, dilapidated houses almost made Farrington agree and want to give up. He chose instead a soil program, and today, as it was 7 years ago, his main theme is "save and build the soil." In preaching that sermon and in going about correcting the erosion problem, Farrington developed the cooperative terracing movement, or farmer soil-conservation association, that is today the pattern for 22 other associations in as many counties in Alabama.

Tallapoosa County is in the east-central part of Alabama, and the land is extremely hilly and rolling. The soil is clay and sandy loam. Roughly, two-thirds of the farms of the county are subject to erosion, ranging from "extremely severe" to light.

Farrington agreed with the specialists that he had to start saving and building the soil. He launched his terracing program in 1932 by holding his first terracing school with the aid of J. B. Wilson, agricultural engineer, on the courthouse square. The 16 "students" went back home and constructed terraces on their farms with mule power. They received their "diploma" as being licensed terracers, but both Farrington and Wilson saw that the terraces, because of the extreme slopes, would not hold up in heavy rains. His next move was to turn to power terracing.

Organize Soils Association

The Tallapoosa County Soil Conservation Association was organized in the summer of 1933. By holding meetings, writing circular letters and news stories, and conducting another terracing school, Farrington convinced the farmers and the county commissioners



Type of eroded soil Fletcher Farrington found in Tallapoosa County when he went there 7 years ago as county agent. (Inset.) Same, as brought back by terracing and winter legumes.

that the cooperative way offered the only sure route to good terracing. The first terracing done on September 7, 1933, was, it is believed, the first terracing done with power equipment and preceded the Federal Soil Conservation Service program by 9 months.

The association is made up of several leading farmers of the county, and this group, together with Farrington, was successful in getting the commissioner's court, the local governing body, to underwrite the purchase of equipment. During the first season's operation six complete terracing units were purchased and turned over to the association on a self-liquidating plan, the association to charge for the use of the machinery to individual farmers in constructing terraces. The price per hour of service was at first \$2. This has been changed several times in an effort to determine what price would pay for the machinery and at the same time offer terracing at a price the farmer could afford to pay.

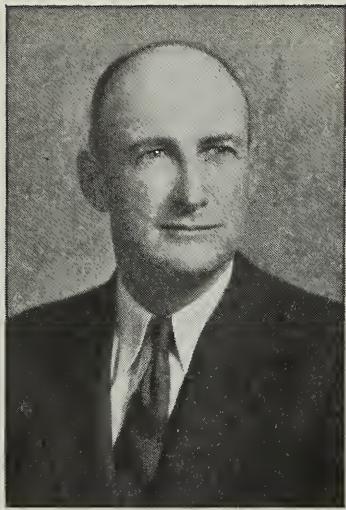
The price per hour now is \$3.50, and Farrington is perfectly frank in saying that since the association started in 1933 the net loss has been \$3,346.32, including depreciation. Had the association started on a basis of \$3.50 per hour the net loss would have been a net profit, he believes.

Two-thirds of Cropland Terraced

This loss does not bother him or the association members, however, for since 1933, 34,136 acres of land have been terraced by the machinery of this association. In 1933, 2,000 acres were terraced for 50 farmers; in 1934, 5,703 for 110 farmers; 1935, 6,297 for 125; 1936, 6,210 for 226; 1937, 6,156 for 354 farmers; and in 1938, up to December 1, the association had terraced 1,120 acres for 58 farmers and was booked for every day in December.

The association has received \$70,680 in

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E. R. JACKMAN
Extension Specialist in
Farm Crops, Oregon

IN THESE days of high-powered agricultural plans and programs a specialist may become a little confused. In the midst of all of these things the specialist is conscious of the insistent little tappings at his door made by the many everyday tasks. If he does one thing, he is likely to neglect three others. It is, therefore, important for him to stop and wonder, like the absent-minded professor in the bathtub, "Now who am I, and why did I get in here?"

His answer to this question will determine not only what his program is, but the even more important things, how he will go about it and what his attitude will be toward the people around him.

County Agent Is Keystone

This question, "Who am I?" is the most important and is the hardest to work out satisfactorily. The county worker is the keystone of extension work, and, to my mind, the only justification for specialists is to help the county agents. Were there no county agents, it is doubtful if it would be worth while for the State to hire specialists, except perhaps to perform some service and regulatory functions.

The United States Department of Agriculture, the experiment stations, the various specialists, the county agent leader, the farmers, and the county agent, all combine their forces to work out a going program in a county, but it is the farmers who should benefit from such a program, and their county agent is the

man they hold responsible for its success. If it backfires, or if it doesn't move forward, there may be a new county agent in the driver's seat before long. The specialist performs some of the functions of a back-seat driver. His directions may be sound enough, but the driver is held in case of an accident.

So the county agent is the direct contact man with the ultimate consumer of our goods, and it is up to all of us to hold up the agents' hands in every way possible. The specialist should always appear to the home folks in a county as a man only there at the invitation of the county agent. Any program offered is the program of the county agent, and the specialist is only seconding it. If one can learn this thoroughly and completely, it will profoundly affect his extension methods.

Struggle for Anonymity

If the specialist then is willing to subordinate himself to the county agent, he must think of ways of doing it. He should discourage a large letter-writing clientele by putting in each letter some such thing as, "Your county agent, Mr. Jones, at Plainview, has given a great deal of time to this subject, knows local conditions, and can usually answer such questions better than we can from this distance." He should avoid giving to farmers information which he has not first given to county agents. He should have some of the widely discussed passion for anonymity. If he is able to make specialists in his field out of each of the county agents in the State and interest and help them in solving the problems he is working with, then his program will probably ramble along pretty well, even if no one else in the State ever hears of him. Some of us may agree completely with this reasoning and yet fail to act logically in line with it because there is so much human nature in us.

A secondary conception of the job is that it is a kind of liaison office between college and field. This is unquestionably true. Those States have the

strongest organizations which have the closest tie-up between extension, station, and teaching work. If each can feel free to draw upon the other's strength at any time without petty jealousy or misunderstanding of motives, then a very happy condition prevails, and the entire State benefits. The specialist can surely help to bring this about.

Another thing for the specialist to remember is that, although the College and the United States Department of Agriculture are the paymasters, the people of his State are actually doing the paying. He should try to think occasionally what justification a State has for collecting taxes, forcibly if necessary, to pay him. That thought is quite sobering. There are so many ways to spend one's time, and it is so easy to embark upon lines of work which will not create wealth to repay people for the taxes they pay to support that particular work.

Now then, we will assume that the professor in the bathtub has decided who he is and why he got in; but there remain the questions, what to do and how to do it. The matter of plans and programs can be given plenty of four-syllable words, but they all resolve down to "What'll we do and how?"

I plead guilty to a common fault—building programs on a strictly commodity basis without too much thought to the problems of the county. Even if a commodity program is successful, it is open to criticism. In late years we have been trying to get away from too much commodity thinking. My field is crops, but in a certain county perhaps I ought to be helping the dairy program and in another county the range-livestock program. A man out on a big livestock ranch and struggling with debt doesn't care whose field his problem is in. It may require combined work from the soils, livestock, engineering, range management, and crops specialists, and if it does—then that is one problem, not five unrelated problems.

The last question is "how?" Each specialist has different methods adapted to

(Continued on page 30)

Soil-Conservation Districts Make Progress

EDD R. ROBERTS

Extension Soil Conservationist
Oklahoma

OKLAHOMA farmers and farm leaders are experiencing rapid progress in a more or less State-wide attack on their most important problem—soil erosion. The State is one of the 26 States having a soil conservation districts law. A total of 24 districts have been organized under the Oklahoma law.

As far back as 20 years ago the Extension Service sponsored erosion-control demonstrations such as terracing, and farmers of the western part of the State practiced strip farming as a means of preventing cotton from blowing out in the spring. The Oklahoma A. and M. College Experiment Station has proved many methods of soil improvement.

The Federal Erosion Experiment Station at Guthrie has furnished experimental data on many conservation practices and has served as a field laboratory on which farmers and agricultural workers could make studies and observations. The Soil Conservation Service has thoroughly demonstrated a complete and well-coordinated program of erosion control and soil conservation on more than 5,000 farms in 10 demonstration project areas and 25 different C. C. C. camp work areas in the State. Nearly 40 voluntary soil-conservation associations have functioned.

Community Action Needed

Individual farmers have been practicing measures of erosion control for years, but they have learned that it is a difficult if not a losing single-handed fight. They recognize that erosion control is not a one-man job and that no single remedy solves the problem. They reason that partial treatment of the problem cannot equal a community-wide cooperative program backed by enthusiastic local leadership. As the forces of wind and water are not halted by the section line or fence row, erosion becomes a community problem, and community problems require community action.

All this contributes to the fact that 24 soil-conservation districts have been organized in Oklahoma in the last 15

months. Some of these districts are on a strictly watershed basis, some are on a problem-area basis, and a few are organized along county lines. The local people and the State soil conservation committee have come to a mutual understanding regarding district boundaries, with the State committee definitely describing such boundaries as prescribed by law.

The following events leading to the creation of the Creek County soil conservation district are representative of those leading to the formation of other districts. The central cross timber, blackjack-covered, sandy type of land was put into cultivation 35 years ago, and the land was noticeably eroded 15 years later. Tenancy became a problem. A terracing program sponsored by the Extension Service began about 1920. Soon businessmen began to cooperate with the county agent and vocational teachers to combat erosion. A qualified person ran lines for farmers.

Later, community clubs were organized, monthly meetings were held, and erosion problems discussed. In 1933 a C. C. C. erosion-control camp was established nearby. Groups of farmers, led by the county agent, made tours of the work area to observe gully control and other features of the erosion-control program. A second C. C. C. camp was established in an adjoining county. At the request of Creek County farmers and through the leadership of the county agent, farm plans were made. Only technical assistance was offered by the Soil Conservation Service on these farms, which served as demonstrations of educational value to local farmers in the extreme western part of the county. By 1936, more than 100 requests for assistance in soil conservation work had been received in the county agent's office.

Conservation Demonstrated

From 1930 to 1938 an intensive pasture-improvement program was carried on under the direction of the extension pasture specialist and the county agent. Through the assistance of the extension agricultural engineer and a public-spirited citizen of Oklahoma, terracing demonstrations were carried on, and home-made terracing machines were given as prizes in terracing contests.



The five supervisors of the Creek County soil conservation district: Left to right, Frank Bollinger, L. R. Lashley, Amil Strella, Jack Carman, and Marion Baker.

In November 1937, a representative group of farmers from Creek County met at Tulsa with representatives from three other counties to determine boundary lines for a soil-conservation district. Four counties were recommended to make up the district. Public hearings were later held, as prescribed by law, which favored the creation of a district. The State soil conservation committee believed that the proposed district was too large, and Creek County was left out of the district.

Creek County farmers immediately petitioned the State committee for creation of a district to include that county. A hearing was conducted, and the proposition received considerable support. The district as finally set up by a majority vote has two watersheds. A committee under the supervision of the county farm agent conducted the election and the educational program previous to the vote on the district. The extension soil conservationist explained provisions of the soil conservation districts law at 16 meetings.

In the election held in May 1938, a total of 434 farmers voted at 16 different places, with 359 in favor and 75 against formation of the district.

On June 2, the Secretary of State issued a certificate of organization for the Creek County soil conservation district. In line with the Oklahoma law, two supervisors were appointed. One supervisor is a leading dirt farmer of the county. The other is owner and manager of a large number of farms in Creek County, having graduated from Colorado University with a degree in geology.

(Continued on page 31)

Tennessee Farmers Chart Course in Solving Land-Use Problems

FARMERS in Claiborne County, Tenn., will tell you that they haven't solved all their land-use problems, but they have charted a course which they believe will lead toward this treasured goal. And land use is a problem in this upper East Tennessee county of rolling topography, where favorable growing seasons and abundant rainfall encourage both crop production and soil depletion.

County Agent C. F. Arrants characterizes conditions as follows: "Claiborne County, with 4,220 farms, is an area of small farms, many of which have low incomes. The average size of farm is only 48.7 acres, and there is an average of 52 persons per square mile. The soils are principally of the shale and ridge type, and much cultivation is done on steep hillsides. There is much need for long-time county-wide land-use planning which recognizes the importance of soil improvement, erosion control, and means of increasing farm income."

Meet With Planning Committee

Each year Arrants and his two assistants, Crosby Murray and Charley Davis, sit down with the county program planning committee of 12 farm leaders and make up a plan of extension activities for the year. Improved land use always receives major emphasis. Among the objectives included in the 1938 program of work were: 600 tons of phosphate and 15,000 tons of lime distributed in the county for use on soil-conserving and soil-improving crops, crop rotation adapted to erosion control and fertility maintenance on 500 farms, winter cover crops on 10,000 acres, 12 farmers to conduct terracing demonstrations—terracing is a comparatively new practice in this locality; 12 farmers to conduct demonstrations in strip cropping, 25 farmers to conduct demonstrations in contour tillage, 25 percent of the farmers in the county saving the seed from home-grown hay and pasture crops, and continued emphasis on the improvement of permanent pastures to increase their carrying capacity.

The new and improved land-use program was inaugurated in Claiborne County in 1935, in cooperation with the University of Tennessee and the Tennessee Valley Authority, and 87 farmers

have come to be known throughout the territory as farm unit test demonstrators. The T. V. A. agreed to furnish new forms of concentrated phosphate fertilizers for application on sod-forming legumes and grasses in order that farmers might test them out to determine their value, effect, and best method of use in land-improvement systems under practical farm conditions.

Before final approval as a demonstration farmer they were asked to set down a plan of operation for their farm for the next 5 years. A tabulation of some of the items in these plans shows their trend of thinking on what is necessary to do the job they are undertaking. Plans made up by 57 Claiborne County demonstrators, starting into the program during 1935, showed that they planned to reduce their corn acreage 40 percent or from 16 to 9.6 acres per farm between 1936 and 1939. At the same time they planned to increase their grass acreage 167 percent or from 6 to 16.2 acres per farm, clover 37 percent or from 8.6 to 11.7 acres per farm.

Although sufficient time has not elapsed to see these plans through to completion, by the end of last year a preliminary survey covering 2 years' operations showed the following results: A reduction in row crops (principally

corn) on steep and erosive land of 45 percent or from 7.7 to 4.3 acres per farm, an increase in deep-rooted legumes (red clover, alfalfa, sweetclover, and Serecia) of 16 percent or from 9.3 to 10.9 acres per farm, an increase in annual legumes and grasses of 90 percent or from 12 to 22.7 acres per farm, an increase in winter cover crops of 22 percent or from 12.1 to 14.8 acres per farm, and an increase of 5 percent in all crop yields.

In addition to the individual farm unit test demonstrators, watershed areas of smaller streams feeding into the Tennessee River have been organized into community demonstrations. The purpose of these organizations is to build a community plan of action based on the improved practices of farm and home adjustment, soil improvement, and erosion control that have been determined by individual farmers in the community.

One of the first steps after organization is the making of a survey by a committee of people in the community to determine what conditions are and to furnish the facts needed in the development of future plans. At the present time, there are 10 such community watershed organizations in Claiborne County. Of these, four have completed their inventory of present conditions and three more are almost through.

Claiborne is only one of the 63 Tennessee counties in the drainage basin of the Tennessee River carrying on a similar program. To date there are 3,968 farm unit test demonstrators and 136 area demonstrations in the State.



Stephen H. Rogers, farm unit test demonstrator of Claiborne County, Tenn., shows the results from triple superphosphate. The two stacks of hay represent hop clover cut from an area 16 by 70 feet. Stack on the left came from land that had been treated with 2 tons of lime and 200 pounds of 43 percent phosphate per acre; stack on the right was from land that had received only lime.

Building Conservation Lines of Defense

Through 4-H Activities

IN EVERY State, 4-H boys and girls are engaged in some phase of conservation with their work covering a wide variety of activities ranging from the preservation of wildlife, forests, and fields to the protection of property and human life.

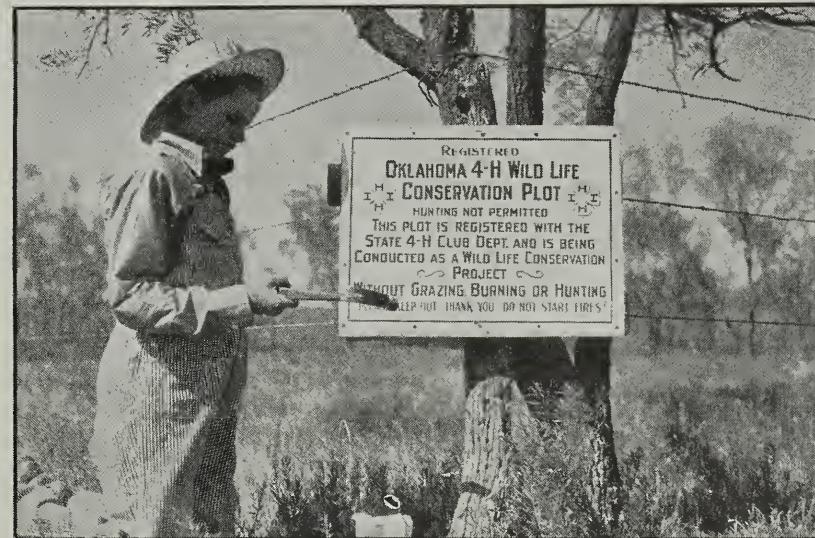
Practice Soil Conservation

In their soil-conservation work, 4-H members are making contributions to the public welfare in Oklahoma, where more than 1,200 4-H'ers are doing a big conservation job with barbed wire in a State-wide campaign. By fencing thousands of acres of rough and gullied land they are checking soil erosion and restoring farm game birds and animals in large numbers. The projects, which include some of the worst-gullied areas in the State, range from 1 to several acres in size. On all, the procedure is the same. First the area is fenced to give natural vegetation year-round protection from grazing. Then precautions are taken to guard against fire. The rest of the work consists of visiting the areas at least once a month to check on results. A count of birds and animals is made on each visit. The first year the club members collect specimens of all plants growing on the plots. These are stored away for study and for use in determining the increase in types of vegetation as years go by.

Club members in many States are being trained in terracing schools and are aiding farmers to run terracing and contour lines. In Hamilton County, Nebr., a group of 4-H boys trained by the agricultural agent and the engineering specialist were selected by the county agricultural conservation association as the best qualified in the county to lay out contour lines for cooperators. Besides doing this contour work for the association, each boy carried a project on some phase of soil-conservation work, such as pasture contouring, grass-variety nursery, or erosion control of some kind.

Twelve boys belonging to a 4-H soil-conservation club in Newton County, Mo., planned two terracing systems and completed the terraces on a 20-acre plot. In addition, each boy planned a cropping system for his father's farm.

Four-H soils clubs in six Iowa counties



Kiowa County, Okla., 4-H club member putting up wildlife sign on corner of project.

are completing their second year in a 5-year land-use program. The boys are studying the land-use policies on their own farms, the types of soil, soil topography, drainage, buildings, and trees, and are carefully mapping these farms accordingly.

In soil-mapping projects developed for 4-H club members in Michigan, the 4-H'ers make a map of their farms showing the fields, buildings, roads, lanes, fences, woodlots, drains, and direction and percentage of the slope. The members are also required to set up a cropping plan for the farm, showing for each field the type of soil, lime requirement, erosion, topography, and record of yield obtained.

Clubs in South Carolina have helped to save the soil by maintaining the terraces, assisting in repairing the weak and broken places. Nearly 2,000 club members participated in conservation work during the past year, their activities including wildlife study, forestry and woodlot management, and soil-erosion work.

In Minnesota, one of the pioneer States in 4-H conservation work, club boys and girls have made considerable headway toward rebuilding natural resources, notably in raising upland game, providing shelter areas and feed lots; in reforestation, erosion-control, windbreak, and shelterbelt projects; as well as in fire prevention and human safety campaigns.

In western Polk County, each of the 29 boys and girls enrolled in forestry work was required to plant enough tree seeds to grow at least 500 trees and to make a plan which would show where the seedling trees should be planted as a windbreak. This work not only increased the interest among the boys and girls in tree planting but also among the parents.

Learn Value of Trees

A survey of the 10,000 black-locust seedlings planted by 624 4-H club boys of Brown County, Ind., showed a healthy survival of more than 88 percent of the trees which had made an average growth of a foot and a half during the summer. These trees, which were furnished free by the State department of conservation, had been planted by the boys on eroded land, in order to demonstrate the value of the trees in checking erosion and to insure a future supply of fence posts.

Two 4-H club nurseries in Marshall County, Ky., have produced approximately 100,000 locust seedlings, which have been sold in the county and to adjoining counties. Many of the seedlings are being set by the 4-H club members themselves.

Some 1,300 Mississippi boys from 45 counties enrolled in the forest-tree-pro-

duction project and produced more than 500,000 tree seedlings which are being used for planting on their farms for erosion control, fence posts, fuel, or timber production. In addition to tree planting, 500 boys and girls engaged in other farm-forestry activities, including tree study, thinning, pruning, improvement cutting, forest protection, and forest-fire study.

Organize Fire-Fighting Crews

An organized 4-H fire crew has been very effective during the year in maintaining fire control in the area surrounding Ansonia, New Haven County, Conn. With the help of the State, this crew has purchased and equipped a fire truck which has extinguished many fires in the valley. In addition to keeping down the losses from fire on 3,000 acres of woodland in the immediate neighborhood of the club, they are frequently called to put out fires in neighboring towns at a distance of more than 10 miles. Selling old papers, which they collected, helped the boys to pay for their fire truck.

For the past 9 years, Wisconsin 4-H club boys and girls have emphasized the value of forests and have studied trees and how to plant them. Since starting this work, the youth have planted seedlings and transplants numbering approximately 3,000,000 in all. The Junior Forest Rangers are playing a big part in the tree conservation of that State. Some 1,400 4-H rangers in 1937 planted more than 390,000 tree plants, two-thirds of which were seedlings. A distinct feature of this work was the making of transplant beds in which to grow these trees to suitable size to plant in the open. The boys have been taught the transplanting technique, and, as a result, transplant beds have been established in farm gardens throughout the State, and the survival of the trees has been high.

The young ranger signs a contract to use the trees furnished by the State conservation department for replenishing woodlots and for planting waste places, rough untillable soil, hillsides, wind-breaks, and shelterbelts. Recent emphasis has been given to the selection of trees that are suitable to the nature of the work and the character of the soil.

Approximately 3,500 boys and girls have taken the 4-H ranger pledge in Georgia. Planting, thinning, and nursery seed-bed projects have been carried on, with all clubs working together to keep fires out of the woods.

The slogan "Young Folks and Trees

Grow Up Together" seems to have a definite appeal to the forestry club members in New York State where they have planted more than a million trees annually for the last 10 years.

The work of the forestry and conservation clubs in Massachusetts has varied from the study of birds, insects, and flowers to actual forestry practices in the woods. The club members have made some fine exhibits of wood samples, bird houses, and feeding stations and have prepared books of pressed flowers. 4-H boys in Franklin County have made a map and a wildlife-population survey, have charted the areas, and have made up a program for this territory.

The outstanding work of a forestry club in Clearwater County, Idaho, has emphasized the importance of sound management of the surrounding forests to the existence of the community, largely dependent on logging and small milling operations. The local school board readily provided facilities in the schools to assist club members in the study of forestry and also furnished funds for the purchase of a small wooded tract to be used as a school demonstration forest.

Alabama Farmers Fight Erosion

(Continued from page 21)

payments from farmers since it was formed. The average cost per acre was slightly in excess of \$2, even though the United States Department of Agriculture estimates that it is worth \$5 to \$10 per acre to properly terrace land. Farrington feels that the land in Tallapoosa has been improved at least \$10 in value.

Farrington has never undertaken any project in his county without the cooperation and backing of the businessmen. They have assisted the association in every way possible. Only through the cooperation of these businessmen and the farmers could the success attained by the association have been made possible. The same cooperation has been true in winter-legume planting which Farrington has conducted along with his terracing work.

In addition to the terracing done by the association, the Soil Conservation Service has terraced approximately 25,000 acres in the county. With these two agencies meeting together and working together, Farrington estimates that within 3 or 4 years Tallapoosa will be the best-terraced county in the United States. Only about 35,000 of the 115,000 acres of cropland remain to be terraced at the present time.

In 1933, 160 farmers in Tallapoosa County planted winter legumes, either vetch or Austrian winter peas, on 2,100 acres. The value of increased yields of crops following these legumes was \$36,900 (based on \$20 per acre). In 1937, 1,617 farmers planted 15,000 acres of vetch, peas, and crimson clover for an estimated increased yield worth \$300. This year more than half a million pounds of winter-legume seed will be planted on 20,000 acres of Tallapoosa County land.

Results of this soil-saving and soil-improvement work are already noticeable. Crop yields have increased remarkably. The normal cotton yield has jumped from 157 to 193 pounds per acre, and corn yields have increased in greater proportions than cotton. In a community meeting (Farrington has 12 active organized communities through which his program is projected) a few weeks ago 30 farmers out of 55 present reported that they had from 100 to 1,500 bushels of surplus corn this year. Each reported that the increased corn yield was due to Austrian peas and terracing.

As other results, Farrington offers the fact that 400 farm families have moved back to the farm from cities where they had gone when the land was given up for lost. Further, more farm buildings are being constructed in Tallapoosa County than in any other county in the State.

Other Counties Profit

In the other 22 counties of Alabama where county soil-conservation associations have been organized, they have been based more or less on this first association. The main difference is that the charge per acre is higher than that with which the Tallapoosa association started. These associations are trying to avoid a similar net loss which was brought about by the low charge per acre.

Each association is a bona fide organization and is usually incorporated. County agricultural agents or assistant county agents usually act as secretaries. A board of directors is chosen, and an account is kept of each month's business. In many counties the boards of revenue or commissioner's court has underwritten or made donations for the purchase of equipment.

The average charge for terracing in the State last year was \$3.33 per hour, and the number of acres terraced per hour varies with the type of land and slope. Usually, however, 2 to 3 acres an hour can be terraced.

Growth in Economics

Has Broadened Extension's Usefulness

C. B. SMITH

AGRICULTURAL economics has played a vital part in extension work from its very beginning. From the earlier work with farm management surveys, farm record keeping, and marketing, developments in the field of economics have allowed extension agents to constantly broaden their usefulness to farm people.

Headlights in Front

In 1923 came the agricultural outlook of the Federal Bureau of Economics, with its accompanying intentions of farmers to plant and breed. The Federal Office of Extension Work immediately recognized the value of this kind of information for farmers. Instead of waiting till crops were planted and then telling farmers what had happened, the outlook proposed to give farmers information in advance. This seemed to place the headlight on in front, instead of behind, where it always had been carried before.

But all good things of federal origin for the farmers find their application out in the States and, in the case of agricultural information, for the most part through the land-grant colleges.

The matter of the outlook was discussed with Dr. H. C. Taylor, then chief of the Bureau of Agricultural Economics, and with Dr. C. W. Warburton; and Dr. Warburton gave his approval to a plan for financing the travel to Washington of State representatives of the economics divisions of the colleges from Federal Extension funds to help develop the agricultural outlook. It was thought, if the State people had part in developing the agricultural outlook, they would take more interest in extending this information to farmers, and the outlook would be more accurate. This financial support from the Federal Extension Service for bringing in State representatives to the outlook conference continued for a number of years, until a State path had been made to the Department here, and State extension funds had grown, and the States were able, convinced, and willing to carry the financial load and continue their assistance in developing the outlook for the common good.

Thus was Extension, which began

This is the second in a series of two articles in which Dr. Smith discusses extension work in economics. In the January issue of the Extension Service Review he discussed earlier economics work.

largely as agronomy and animal husbandry, growing up through farm management, marketing, agricultural outlook, credit, and other phases of the work until at the present time around 22 percent of all agricultural extension efforts center in the field of economics, including program planning and organization.

But it remained for the coming of the New Deal to make agricultural economics extension blossom out fully through the various New Deal plans for crop control, benefit payments, land use, resettlement, rehabilitation, cheaper money, easier credit, crop loans, and the like, into the whole broad field of agricultural economics.

I do not need to dwell on the part Extension has played in helping to interpret the regulations of New Deal agencies or in helping farmers to organize in order to take advantage of New Deal laws, or in carrying out the educational phases of the New Deal agencies working in the agricultural economic field. That is well known to all of us.

Up to the time of the coming of the agricultural outlook and the New Deal, Extension was largely concerned with farm management, marketing, and the smaller matters of agricultural economics. Beginning with the agricultural outlook and the applied agricultural economics of the New Deal, Extension now weaves into its program every matter of economics from any source that has significance for rural people.

All Pulling Together

In its emphasis of agricultural economics today, Extension does not forget its birth, however, and the fact that the first essential of farming is to grow crops and to raise livestock, to have something to live on and something to sell. In beginning Extension, we began where the farmers were and where the agricultural college and experiment station were, and where the Federal Department of Agricul-

ture was; and we have tried to keep abreast of our growing knowledge of agricultural economics and to stimulate the experiment stations to more research and the colleges to more and better economic teaching. We don't forget that in dealing with rural people there should be unity of effort in college teaching, research, and extension. They are not three separate teams; they are one team, pulling together.

The forecasts of the outlook, with its accompanying surveys of intentions to plant and breed, and the experiments of the New Deal in applied economics have set extension economic thinking ahead, probably 20 years; and that is as it should be. Extension does not normally precede research or college and administrative philosophy, but, as a representative of these institutions, carries these philosophies to the field and applies them.

Farm Family Living

There remains one other development to be mentioned before closing this paper, and that is Extension's part in the farm family living outlook.

Agricultural economists, from the beginning, pointed out that the farm contributes directly to family living. Research studies, about 1928, brought to light information on the value of a cooperative wife in making for success in farming.

The need for providing outlook information on farm family living, it seemed to the Federal Extension Service, would be of growing importance; and, since extension workers were reporting to us that the farmer was using agricultural outlook information, the Federal Extension Service, again in conference with the Bureau of Agricultural Economics and the Bureau of Home Economics, indicated its willingness to finance the State home management extension specialists to come to Washington and help to develop an outlook service for farm family living.

This year is the fifth year that farm

and home management extension specialists have met together to pool their resources to help the entire farm family use outlook information in making yearly adjustments, both on the farm and in the home. This has been a distinct addition to the agricultural outlook, and we are trusting that it will grow into great usefulness.

Marketing Work Broadens

We have not in this paper touched upon the marketing phase of agricultural economics extension or farm credit or farm tenancy, but we find that our paper has already outgrown its limits. In bringing it to a close, we would leave on your minds the final thought that the Agricultural Extension Service of the Federal Department of Agriculture and land-grant colleges from the outset, has concerned itself with economics, even before it had much economic information to extend, and has been one of the chief agencies in the United States in stimulating the economic research and economic teaching work of the last 25 years in the land-grant colleges.

Marketing extension work is a tale in itself. This phase of the work developed concurrently with the outlook and with the growing interest of farmers in the field of cooperation. During the more recent years, marketing extension has broadened to include the more general aspects of the marketing problems, as well as the cooperative organization and management phases. We would add only one thought here with reference to it, and that is that the hope of the Nation is that Secretary Wallace may be successful in his efforts to find a solution of the farm marketing problem through wider distribution of agricultural surpluses to the needy families of the United States. With our wealth of resources to produce, it would seem as though it were not too much to expect that every family in the United States should have enough to eat, enough to wear, and shelter that they may call their own.

In our marketing experimentation of the past years, I wonder if we aren't at last on the road to a solution of the marketing problem. I think we are. All success to the Secretary and his staff in this field. He would seem to be approaching the Promised Land. May he go up and possess it. And may the Extension Service, close as it is to millions of farm families, continue to be alert to their needs, and at the same time accept responsibilities in the newer and larger developments of the times.

Every Acre to Its Best Use

FRED R. KEELER
County Agent, Ross County, Ohio

THE FARMERS of Ross County, Ohio, have generally recognized the gradual decline in the natural productivity of their soils. However, no systematic plan of study had been made of this condition until the county land-use committee of representative farmers undertook to make such a plan 3 years ago.

It was first found necessary to formulate a plan of procedure. Because agricultural conditions vary so widely within the county, the committee agreed that the first step should be an attempt to divide the county into areas in each of which the problems would be much the same. The most logical plan seemed to be the one based upon soil formation. Using this method, the county was divided into six parts. Upon completion of this task it was found that productivity, crop adaptation, erosion, lime requirement, water supply, etc., were closely related to such a plan of mapping, and was, therefore, the best method to be considered in determining common problem areas.

The common problem areas having been determined, the committee considered the next logical step to be that of classifying the land in each area upon the basis of its best use. The farmers making the study believed that all land should be made to work for its owner or operator. The kind of work it should do, however, would depend upon topography, productivity, lime requirement, and reliability and quality of water supply. The following table shows the recommended shifts for the whole county as determined through this plan of procedure.

The committee recommended these shifts because, in their opinion, the land

would thus be put to its best use, and this was the first fundamental step in working out a land-use program for the county. Submarginal or seriously eroded cropland should be shifted to permanent pasture or woodland. Woodland pasture provided poor pasture, and livestock damaged timber production. For these reasons, it was recommended that nearly two-thirds of this land should be used for woodland purposes. Also a large portion of "other pasture" was considered to be better adapted to tree production than to pasture. The land classed as "all other land" was largely waste land and, therefore, was not being economically used. As much of it as possible should be put to work in an economic way, namely, in the production of trees.

The next logical step in a land-use program included a balanced cropping system, erosion control, and a recommended plan of pasture and woodland management. These were necessary if further decline in natural soil productivity was to be prevented. A better balance between degrading and restorative crops should be brought about through planting fewer acres of corn and small grains and seeding more acres of clover, sweet-clover, and alfalfa. Also wastage of manure should be reduced, and greater use of lime and commercial fertilizer was recommended.

These recommendations would be worthless if they were not carried out. The committee recognized that it would be a long-time program, lasting over a period of years, but, nevertheless, it should be started. Their program has consisted of meetings, where the program was discussed with groups of farmers, and the establishment of individual demonstration farm units. Also, it has been used as a basis upon which the local extension program has been developed.

Recommended land-use shifts

Classification of acreages before recommendations	Acres	Shifts recommended			Classification of acreages recommended by the county committee		
		Percentage of total	Minus	Plus	Result		
Total crop land.....	198,152	5.22%		2.22%	14,740		183,412
Permanent plow pasture.....	28,154			↓		4,397	32,551
Other pasture.....	31,055		41.9%		13,022		18,033
Woodland pasture.....	45,255			62.0%	28,053		17,202
Woodland.....	50,740		↑			55,827	106,567
All other land.....	17,637		25.0%	↓	4,409		13,228
Total land in farms.....	370,993				60,224	60,224	370,993

Utah's Irrigation Program Leads to Water and Soil Conservation

IRRIGATION experiments conducted during the past two growing seasons by farmers in Davis and Weber Counties, Utah, in cooperation with the Agricultural Adjustment Administration and the Utah Extension Service, will probably lead to major changes in this State's farm practices.

Inasmuch as Utah's maintenance and development is determined largely by the amount of irrigation water available, practices that conserve water or make it cover a wider acreage than heretofore are looked upon with a great deal of interest in this semiarid region where rainfall during the growing season is far from enough to mature crops. Up to the present time only 1,324,000 acres of the State's 52 million have been placed under irrigation, and only 480,000 acres are farmed without artificial application of water. It is estimated that approximately 6 million acre-feet of water are available in Utah, nearly 4 million of which are allocated in the water rights of the 1,324,000 acres.

Water Conservation Important

For a number of years the Extension Service and other agencies have been appealing to the people of the State to conserve irrigation water and develop all available sources to augment the too scanty supply. The Federal Government has developed magnificent reclamation projects, but still about 80 percent of the irrigable land has deficient water rights. No scientific data were available to serve as a basis for an irrigation program on individual farms. Few farmers knew just how much water they were using each season, nor did they know how much water was really required to mature crops. It was clearly evident that under rather common irrigation practices much of the fertile topsoil of the best farms of the State was being washed away during applications of water.

Two years ago officials of the A. A. A. consented to a request made by the State Extension Service to allow farmers in Davis and Weber Counties to comply for benefit payments under the agricultural conservation program by installing weirs and measuring the amount of water used for maturing crops during

the growing season. A special program was worked out for these counties, including benefit payments for approved irrigation practices.

Farmers Try Plan

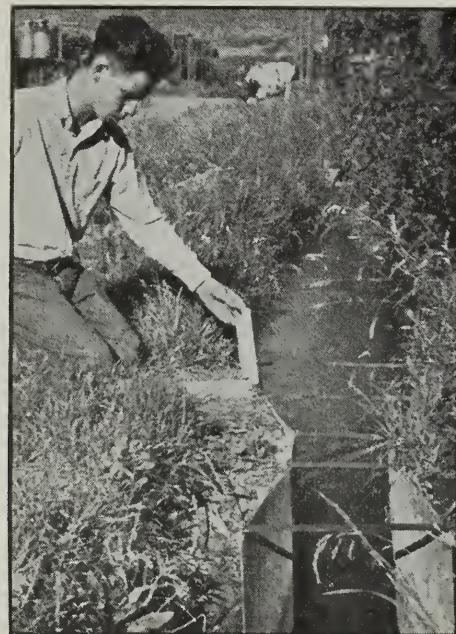
Because it was rather late in the season when the provisions of the program were announced, only 89 farmers of the original 100 who signed, completed their projects. Each one was instructed that, in order to comply, not more than 6 acre-inches of water should be applied in any single irrigation; that the soil should be prevented from washing, leaching, or water-logging. Measuring devices were installed at the head of ditches leading directly into cooperating farms, and the amount of water used on each crop was computed by measurements on the weir, checked against the length of time water was applied on the particular piece of land.

Demonstrations were conducted throughout the two counties for the purpose of showing the farmers how to construct, install, and check weirs, and the agricultural agents and committeemen inspected each device to see that it was made according to specifications. During the first year of the experiment a full-time engineer was employed to assist the committee in checking on the water-measuring equipment and to collect the records kept by the farmers. In 1938 the number of cooperators increased to 435.

Because the irrigation program was new, farmers went into it with reservations. They were not sure whether they had been using more or less than 6 acre-inches of water in a single application. They were also fearful that the prescribed procedure might result in reduced yields or crop failure. The results, however, have been most satisfying to the farmers, to those who had charge of the experiment, and to the Extension Service and the Agricultural Adjustment Administration.

An analysis of the data collected revealed that the total seasonal requirement of water for best farm practice was considerably less than that usually applied; soil erosion was kept to a minimum, and crops were actually improved with smaller applications of water.

"The experiment gave a thorough con-



Taking a reading on one of the weirs used in the Utah irrigation program.

vention that crops can be raised with much less water than is being used regularly in Utah, and that irrigation can be performed without erosion," Director William Peterson of the State Extension Service recently wrote in making a report of the project. "If all the farms in the State could be irrigated with the same care as the group under the experiment, the available water could be extended to 50 percent more land than is now being irrigated.

Almost without exception, the experiment has been of benefit, in that it has shown the farmer the size of stream he has used, the amount of water applied, and the amount actually needed to mature various crops. Perhaps the greatest benefit from the project, however, has come from soil conservation.

Data gathered during this 2-year experiment represent the first that have been compiled on the actual use of irrigation water on a large scale in Utah. At the present time these data are being used to good advantage by the farmers in their county and planning board meetings and by the Extension Service in carrying on an educational campaign throughout the State.

This special irrigation practice in Weber and Davis Counties is not to be continued under the 1939 A. A. A. program, as it was experimental in nature, but the experience in these two counties has been used in formulating practices for irrigated land that will be applicable in all States with irrigated land.



McCormick Heads County Agents' Association

DEWEY McCORMICK, who for the last 13 years has been county agent in Morris County, Kans., was elected president of the National Association of County Agricultural Agents at the recent annual meeting of the association in Chicago. Mr. McCormick has been instrumental in organizing county agents in his State. His county has the oldest Hereford breed association in the State and also boasts the first C. C. C. camp for soil-conservation work in the State.

J. E. Parker, Lexington, Ky., was named vice president, and C. C. Keller, Springfield, Mo., was reelected secretary-treasurer. George W. Boyd, Wheatland, Wyo., past president, was selected as the fourth member of the executive committee to serve along with the three officers.

Distinguished service certificates for outstanding work were awarded by the association to 23 county agents and former county agents. These are the first such awards the association has granted.

To be eligible for one of the distinguished service awards, an agent must have had at least 10 years of service; must be a graduate of an agricultural

college or have equivalent training; must have graduate credits in agricultural economics, education, or sociology; and must have worked out a county program to include an agricultural policy for the county and a year's program of activities. From the many eligible for the awards a committee selects and the association approves the few persons to whom the awards are given.

Those receiving the awards were: M. L. Wilson, Under Secretary of Agriculture, and Harry L. Brown, Assistant Secretary of Agriculture, Washington, D. C.; J. W. Merrill, district extension agent, Ames, Iowa; Judd Brooks, district extension agent, Jackson, Tenn., and county agricultural agents as follows: K. A. Kirkpatrick, Minneapolis, Minn.; J. C. Hedge, Youngstown, Ohio; R. L. Olds, Kalamazoo, Mich.; J. E. Whonsetler, Columbus, Ohio; Ellwood Douglass, Freehold, N. J.; Frank R. Kerrigan, Dubuque, Iowa; Bright McConnell, Augusta, Ga.; Myron E. Cromer, Muncie, Ind.; E. V. Ryall, Kenosha, Wis.; Elmore O. Williams, Toledo, Ohio; J. E. Parker, Lexington, Ky.; George W. Larson, North Branch, Minn.; H. S. Benson, Vincennes, Ind.; George F. E. Story, Worcester, Mass.; W. J. Tiller, Chesterfield, S. C.; H. L. Gibson, Torrington, Wyo.; S. D. Truitt, Atlanta, Ga.; George W. Boyd, Wheatland, Wyo.; and H. E. Abbott, Indianapolis, Ind.

Where the Problem Begins

(Continued from page 17)

reached last July between representatives of the Department and the land-grant colleges.

Here we are giving services much broader than recommending technical practices on individual farms. We have agreed to take the lead in aiding farm

people to study their problems and make recommendations on a community basis and in the light of all the needs and all the help that different governmental agencies might give in meeting those needs.

Such planning by farm people, based on all the facts research and educational agencies can give them, will surely lead them to a better understanding of the national as well as local problems affect-

ing their communities. It will also give them machinery for making recommendations that will true up, localize, and further coordinate the various national programs that are aimed at meeting those problems.

MEANS TO THE END. Of course, we must not forget that land-use planning and saving and building up the soil are only means to an end. The ultimate objective is to conserve and develop human resources vitally essential to the betterment of rural living and the Nation's welfare. As unwise use of the land to grow crops and produce income is so large a part of the farm problem today, in land-use planning we as extension workers have one of our greatest opportunities to work toward those objectives.

The greatest hope I see for the success of such land-use planning lies in the sound organization and stimulation of the local farmer planning committees. In this, extension workers are in best position to take the lead, and on the alertness and initiative with which we take this lead largely rests the future success of our latest land-use planning efforts.

My Job as I See It

(Continued from page 22)

his personality. One man may set the prairie afire with speeches whereas another man has a genius for organizing committees and making them tick. Another knows how to catch the public fancy with intriguing newspaper stories. But, whatever the method, I think we should strive for the spark of human interest all the time. The best idea in the world will fall feebly to the ground unless vitality is breathed into it. Extension work was founded in the first place upon the assumption that experimental work was buried in dry bulletins and reports and that someone was needed to exhume and resuscitate it. In handling information then, we need to be careful that we do not serve merely as a second set of pall bearers. That is the theory. A strict following of it would require drastic overhauling of my circular letters. Our line may be so good that it sells in spite of us, but when it doesn't sell, perhaps the fault lies as much in us as it does in the customers to whom we are trying to sell the ideas we advocate.—*Excerpt from annual report of E. R. Jackman, extension specialist in farm crops, Oregon.*

Californians Gather Curtain Data

In Building a Home Program

FOUR hundred and thirty-one farm women, members of home-department groups in Stanislaus County, Calif., meeting in 16 centers last April, reported to the home demonstration agent, Mrs. Dorothy Schreiner, on their buying practices in regard to home-made and commercially made curtains and draperies. The information, including prices usually paid, was gathered to insure a program which would meet the specific and immediate needs in the county.

The summary disclosed that glass curtains are used in every home. Forty percent of the families buy them ready-made; 35 percent make them; and 25 percent buy or make them, depending on circumstances. The most commonly used kitchen and bathroom curtains cost 98 cents or less a pair; 2½-yard curtains suitable for other rooms of the farm home usually cost \$1.98 or less a pair.

Draperies are used in 169 (39 percent) of the 431 homes reporting. Ninety-four of these women make the draperies for their homes; 75 buy them ready made. Of this number, 48 buy unlined draperies, 23 buy lined, and 4 buy interlined.

One hundred and twenty-eight families have unlined draperies, and two-thirds of these make them; 37 have lined draperies, and 14 of this number make them at home. The four who reported having interlined draperies buy them ready-made.

As the result of these data considerable time was given to guides in buying

materials for home-made and ready-made glass curtains, steps in making glass curtains, and their care. Somewhat less time was given to the selection of draperies and drapery materials. Steps in making draperies, both unlined and lined, were demonstrated. Interlined draperies were shown and the steps in making them described briefly. Those women who wished to make them were given individual help.

It was the opinion of the women that they could save much more money in making draperies than in making glass curtains. However, the number of windows to be curtained, the pattern and colors desired, and the irregular shapes and sizes of windows are often reported to be the controlling factors in deciding whether to buy or to make glass curtains.

The April meeting, at which time the data were gathered, was given to a discussion and demonstration of shades, blinds, glass curtains, and draperies. Common types of both drapery and glass-curtain materials were shown. Poles, brackets, rods, rings, and other accessories were exhibited.

The month of May was given to the subject of ready-made versus home-made curtains and a discussion of the check sheets.

Following both meetings there were home calls to give specific help on problems of window treatment wherever needed. The month of June was devoted to zone meetings on the construction of curtains and draperies.

Oklahoma A. and M. College Experiment Station, School of Agriculture, Federal and State Forestry Departments, Bureau of Agricultural Economics, Soil Conservation Service, vocational agriculture department, and other agricultural agencies are represented on this subcommittee. A conference is usually called with supervisors of a district, and committee members contribute their ideas to the program and work plan. When the plan is finished, it comprises the thought of the people of the Soil Conservation District and the advice and consultation of various Government agricultural agencies.

When the program planning of a district is started, a general meeting is held by the supervisors. Representatives of agricultural agencies located in the district participate. Operation of the district program, the work plan, and educational work are outlined.

The county farm agent and vocational agriculture teachers conduct the educational work in the district, using as a guide the program and work plan. Those conducting the educational program have the privilege of calling upon technicians from other governmental agencies for assistance.

With the cooperation of the State soil conservation committee, and other agricultural agencies in Oklahoma, the State Extension Service has launched a definite educational program in the 24 organized soil-conservation districts. Meetings of State representatives of each agency interested in soil-conservation districts have been held with each agency outlining its responsibilities.

District supervisors, local representatives of cooperating agencies, leading farmers, and others in each district then hold conferences outlining the program and work plans for the soil conservation district. Leading farmers then planned the intensive educational program now being carried to each local community in the districts.

Teamwork and cooperation is deemed all-important if excellent cooperation continues in the 24 soil-conservation districts now organized. Seven districts are already operating under a memorandum of understanding with the United States Department of Agriculture.

The definite enthusiasm shown by farmers, local leaders, and representatives of various agricultural educational agencies in the formation of these districts shows that there is ahead in Oklahoma a steadily growing program by which farmers will battle soil erosion on a cooperative basis.

Soil-Conservation Districts

(Continued from page 23)

In August, two landowners and one tenant were elected as supervisors to make up the governing body of five. One landowner operates several farms, manages a gin and a country store, and has been president of the local agricultural community club for many years. The tenant farmer is a former school teacher and has served on the county A. A. A. committee. He was the Creek County farmer-delegate to Washington in 1933.

The third member, about 30 years old, is a college graduate and was an athletic

coach before returning to the farm. He is considered one of the most successful young farmers in the county.

A district program and a district work plan were prepared for the district by the supervisors, assisted by representatives of interested agricultural agencies.

In Oklahoma, the State soil conservation committee has appointed a subcommittee to assist supervisors in writing programs and work plans for districts, and in assembling data. The assistant director of extension is chairman. The

Planning Committee Leads Way

In Taylor County, Iowa

R. M. DAVIE

County Agent, Taylor County, Iowa

THE REAL beginning of soil conservation in Taylor County was during the winters of 1936 and 1937, when 16 farmers on the county agricultural planning committee took inventory of soil and fertility losses in the county and began making recommendations to stop them.

Taylor County is fairly typical of southern Iowa, with a topography in general ranging from undulating to rolling hills.

Soil Conservation Needed

Heavy cropping during the depression years and accelerated erosion caused by the drought years of 1934 and 1936 brought about a tremendous drain of soil fertility and actual loss of soil.

The county agricultural planning committee readily recognized the need of planning to conserve soil as suggested by the Extension Service of Iowa State College.

Days and nights were spent debating and planning crop rotations and conservation practices that could be recommended for farms of the county. Soils specialists from the Extension Service and the Soil Conservation Service were called upon to aid the committee in arriving at conclusions. Rotation systems were worked out for each soil type, and recommendations were made for mechanical methods of saving soil, fertility practices and moisture conservation to halt erosion and fortify against drought.

Printed copies of this report were put into the hands of nearly every farmer in the county.

Newspapers carried stories of the committee's work, as well as others, pointing out the devastating effect of the soil erosion and the need for corrective measures. The county agricultural agent discussed soil conservation problems with individual farmers and groups of farmers and with church congregations on Rural Life Sunday. Tours were arranged to the Tarkio Watershed, a State and Federal project near Shenandoah, Iowa, so that farmers might learn of the soils experiments being carried on at that station.

Soon farmers began to ask for terracing demonstrations, help in laying out contours and aid in obtaining limestone, trees for planting in gullies and pasture-seeding mixtures to return depleted land to permanent grass.

In the fall of 1937, three demonstration farms were selected, and a 5-year plan of soil and moisture conservation was planned by the cooperators, Soil Conservation Service technicians, and extension soils specialists.

In the summer of 1938, directors of the county farm bureau and Bedford Community Club saw the need of a soils association to develop and direct a program of building and saving soil.

The first step was to call in leaders from each township in the county drawn from the ranks of farm organizations, the A. A. A., and the planning committee. The county agricultural agent in an adjoining county and his soils committee gave helpful suggestions in organizing a soils association. More meetings followed with the aid of the extension and soil conservation specialists, and more farmers and businessmen became convinced of the need of a soils association.

Soils Association Organized

Articles of incorporation were drawn up, adopted, and filed; farmers and businessmen began paying their dues, and the Taylor County Soils Conservation Association took on real life.

Seventeen farmers, representing every community in the county, were elected to guide the destinies of the association.

Soils problems were again evaluated, problem areas in the county were outlined, and plans were made for soil-conservation demonstrations, serving each problem area in the county.

Previous letters from the Soil Conservation Service and other public officials gave hope of a C. C. C. erosion-control camp, provided enough interest and cooperation was shown by farmers of the county.

The determination and spirit of the association, together with the fact that vacant barracks were available at Bed-

ford, brought about the allocation of a C. C. C. camp in October 1938. Immediately, groups of farmers began to petition for soil-conservation demonstration areas. Two proposed areas were approved by the soils association, and 5-year plans for soil and water conservation were developed by the Soil Conservation Service and the cooperators.

Full Speed Ahead

More petitions began to arrive at the association headquarters, and more approvals came from the soils association. Soil-saving consciousness became a reality, and soon demonstrations will dot every section of the county.

Today, farmers who 3 years ago showed no interest or perhaps ridiculed terraces, contour farming, and strip cropping are intensely interested in their possibilities and are ready to accept them as the future farming pattern on the rolling hills of southern Iowa.

Farrell Joins New Marketing Division

George E. Farrell, former extension worker and more recently Director of the Western Division of the Agricultural Adjustment Administration, has been appointed Associate Director of the Division of Marketing and Marketing Agreements of the United States Department of Agriculture.

C. C. Conser, Assistant Director, has been named Director of the A. A. A. Western Division; and Norris E. Dodd, chairman of the Oregon State Agricultural Conservation Committee, has been appointed Assistant Director.

NEW YORK 4-H clubs have a scholarship fund of \$2,500 raised by contribution of club members, club agents, and the State 4-H staff. This provides at present two \$50 scholarships annually for former 4-H club members. The scholarships are to be divided equally between the College of Agriculture and the College of Home Economics.

IN BRIEF

Nonspoilage Club

The 100-Percent Nonspoilage Club, a unique organization based upon achievement in canning fruit and vegetables at home, has been formed by homemakers in Oxford County, Maine. Application for membership in this club is limited to the women who agree to use all possible precaution in canning. Prospective members enroll at the beginning of the canning season with the local farm bureau foods leader, and the following spring they report results. Women who have lost less than 1 jar or can in 20 become members for the year. Members who have canned the largest amounts without any losses are declared outstanding canners.

Erosion Control

A huge erosion-control project has been launched in 15 mountain counties in North Carolina within the T. V. A. watershed area, whereby 2,000,000 trees will be planted on worn-out, abandoned, and eroding fields.

Any farmer who has land in need of erosion control and who will agree to give reasonable cooperation in carrying out the project has been invited to apply to his county agent. The T. V. A. will furnish the seedlings, and the county agents, the T. V. A., and extension foresters will supervise the work. The farmers will furnish the necessary materials and do the work in preparing the site for planting, in the actual setting of the trees, and in giving the necessary protection from fire and grazing.

Like to Form a Club

Ninety-seven percent of the 638 rural young people interviewed in a recent study in South Carolina said they would like to join with others of a similar age in forming an organization. They were all unmarried and between the ages of 16 and 25 years. They preferred that such a group include both sexes, have fewer than 50 members, and meet at the community or high-school center twice a month.

The types of activities and subjects they wished to have included in the pro-

gram were: Agriculture, home economics, choosing and getting started in a vocation, getting along with people, beautifying the home grounds, music, athletics, camps, and parties. Details and results of the study are explained in Federal Extension Service Circular 293.

500 Alaska 4-H'ers

4-H club work is going forward in Alaska, says Director Lorin T. Oldroyd. More than 500 members are enrolled in communities all the way from Ketchikan to territory beyond the Arctic Circle. Three clubs with a total enrollment of 19 Eskimo girls are being carried on by correspondence. One very outstanding feature in 4-H organization is the fact that men and women in all parts of Alaska are willing and anxious to become 4-H leaders. In one community it was necessary to find club members in order that leaders could have a 4-H club.

Full-Time Club Agents

Forty-five New York counties employ full-time county club agents. Thirteen of these counties employ two club agents each, one trained in agriculture and one in home economics.

District farm-management training schools for the club agents were held in December to bring the club agents up to date in farm-management problems and also to provide a forum for discussing ways and means of meeting the farm-management needs of older club members.

Clergy Conservation Conscious

Clergymen of Whiteside County, Ill., have been enlisted in the cause of soil conservation through a field day and dinner recently staged by F. H. Shuman, county agricultural agent. A group of 56 persons, including clergymen, farm bureau board members, and soils specialists, visited an erosion-damaged farm in the forenoon, and after a noon dinner they participated in a discussion of soil conservation and the A. A. A. program.

Help Worthy Boys

Designed to assist worthy farm boys in obtaining a college education, the I. O. Schaub Loan Fund has just been established by the North Carolina Farm Agents' Association. Similar to the Jane S. McKimmon Loan Fund for farm girls established in 1927, the new scholarship money will come from dues paid into the county agents' association. Contributions from other members of the Extension Service will swell the total, says O. H. Phillips, Mecklenburg County agricultural agent and president of the association. 4-H club boys who have done outstanding work will be eligible to receive money from this fund.

Swine Tour

The first swine tour held in southeastern Michigan in 9 years was arranged recently in Lenawee County by County Agent Louis G. Hall and attracted some 75 persons, including swine men from adjoining counties in Michigan and Ohio. Six stops were made on the tour, followed by a banquet in the evening at the Medina Grange Hall.

Progressive steps in swine sanitation, made with the use of the McLean County system, were studied and discussed thoroughly at several farm visits. Many instances were seen where this system made possible cheaper and more profitable pork production.

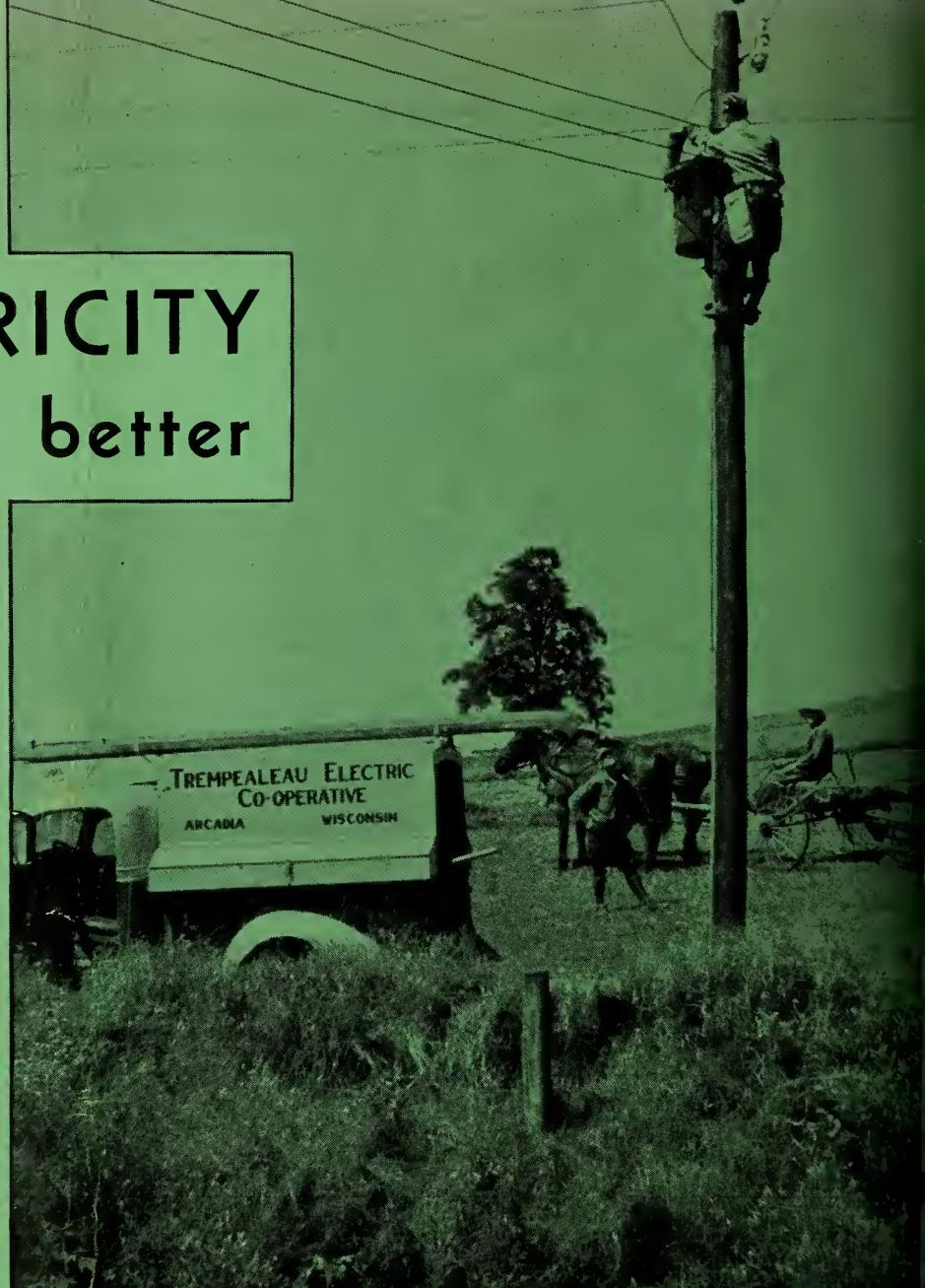
1,885 Get Tenant Loans

A survey of loans made during the first year's operation of the Bankhead-Jones Farm Tenant Act shows that 1,885 farm tenants, sharecroppers, and laborers obtained funds to buy farms of their own, averaging 130 acres each.

The Farm Security Administration reports that the average loan to finance the farm purchase was \$4,890, but the average borrower spent only \$4,077 for the farm itself, using an additional \$804 for repairs and improvements to the property. Incidental expenses such as legal fees, land-appraisal and mortgage-recording costs absorbed the balance of the loan, as well as an average of \$42 invested by each borrower.

WITH ELECTRICITY things look better

Rural electrification in the United States is on the march. High line electric service for farms has become a reality in most sections of the country. On January 1, 1939, the Rural Electrification Administration through about 500 local groups in 44 States had financed the construction of 158,000 miles of electrical distribution facilities to serve 500,000 farm families that had been previously without electric service and without chance of getting it. Over 85 percent of all R. E. A. projects are cooperatives. Three years ago slightly more than 10 percent of American farms enjoyed electricity. Today over 21 percent are receiving service.



Among numerous pamphlets and bulletins, designed for rural use, which R. E. A. has for distribution are the following:

RURAL ELECTRIFICATION ON THE MARCH
WIRING YOUR FARM AND HOME
ELECTRIFYING YOUR FARM AND HOME
LIGHTING EQUIPMENT FOR THE FARM AND HOME
RURAL ELECTRIFICATION NEWS (monthly publication)

For further information write to

**RURAL ELECTRIFICATION
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